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FORM PTO-1390 (REV. 11-2000) U.S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY 'S DOCKET NUMBER	
FCS-PT001	
U S APPLICATION NO (If known, see 37 CFR 1.5)	
09/868391	

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/EP99/10100	17 December 1999	18 December 1998

TITLE OF INVENTION: A REMOTE FEEDER REACTANCE COIL

APPLICANT(S) FOR DO/EO/US: Rainer Schmidt and Günter Widera

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [x] This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. [ ] This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. [ ] This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. [ ] The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. [x] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. [ ] is attached hereto (required only if not communicated by the International Bureau).
   b. [x] has been communicated by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US).
6. [ ] An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
   a. [ ] is attached hereto.
   b. [ ] has been previously submitted under 35 U.S.C. 154(d)(4).
7. [x] Amendments to the claims of the International Aplication under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. [ ] are attached hereto (required only if not communicated by the International Bureau).
   b. [ ] have been communicated by the International Bureau.
   c. [ ] have not been made; however, the time limit for making such amendments has NOT expired.
   d. [x] have not been made and will not be made.
8. [ ] An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).
9. [x] An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. [ ] An English lanugage translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

11. [ ] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. [x] An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. [x] A FIRST preliminary amendment.
14. [ ] A SECOND or SUBSEQUENT preliminary amendment.
15. [ ] A substitute specification.
16. [ ] A change of power of attorney and/or address letter.
17. [ ] A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. [ ] A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. [ ] A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. [x] Other items or information:
    copy of the International Publication with Search Report; and Application Data Sheet

U.S. APPLICATION NO (If known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
09/868391	PCT/EP99/10100	FCS-PT001

21. ☐ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **$1000.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO **$860.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **$710.00**

International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) **$690.00**

International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) **$100.00**

CALCULATIONS PTO USE ONLY		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 860.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$ 0.00	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	13 - 20 =	0	x **$18.00**	$ 0.00	
Independent claims	1 - 3 =	0	x **$80.00**	$ 0.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$270.00**	$ 0.00	
TOTAL OF ABOVE CALCULATIONS =				$ 860.00	
☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.			+	$ ---	
SUBTOTAL =				$ 860.00	
Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				$ 0.00	
TOTAL NATIONAL FEE =				$ 860.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$ 40.00	
TOTAL FEES ENCLOSED =				$ 900.00	
				Amount to be refunded:	$
				charged:	$

a. ☒ A check in the amount of $ 900.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 22-0493 in the amount of $ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 22-0493 . A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Volpe and Koenig, P.C.
Suite 400, One Penn Center
1617 John F. Kennedy Boulevard
Philadelphia, PA 19103

SIGNATURE

Darryl W. Shorter
NAME

47,942
REGISTRATION NUMBER

09/868391
Express Mail Label No. EL719434396US
Rec'd PCT/PTO 18 JUN 2001
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:	
	Schmidt et al.
Application No.:	Not Yet Known
Filed:	Not Yet Known
For: A REMOTE FEEDER REACTANCE COIL	
Group:	Not Yet Known
Examiner:	Not Yet Known

Our File: FCS-PT001

Date: 06/18/2001

PRELIMINARY AMENDMENT

Box PCT
Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to the initial Office Action, Applicants respectfully request that the application be amended as follows:

IN THE CLAIMS

Please amend the claims as follows:

1. (Amended) A remote feeder reactance coil for supplying energy to, or withdrawing energy from, signal transmission lines, comprising a primary winding (102; 202) of an electrically conductive material which carries the feed current, as well as an attenuation circuit (118; 218), characterized in that

said attenuation circuit (118; 218) includes a secondary winding (112; 212) of conductive material, wherein said secondary winding (112; 212) and said primary winding (102; 202) interact with each other through capacitive, inductive, or capacitive and inductive coupling.

2. The remote feeder reactance coil of claim 1 characterized in that said primary and said secondary winding (102; 112; 202; 212) have substantially parallel winding axis, in particular one common winding axis.

4. The remote feeder reactance coil of claim 2 characterized in that the turns (214) of said secondary winding (212) are wound within the turns of said primary winding, below the latter, or outside and on the turns (210) of said primary winding (202).

5. (Amended) The remote feeder reactance coil of claim 1 characterized in that said conductive material of said secondary winding (122; 212) is a material with an ohmic resistance.

6. (Amended) The remote feeder reactance coil of claim 1 characterized in that said attenuation circuit (118; 218) includes an ohmic resistor (116; 216) for connecting the terminals of said secondary winding (112; 212).

7. (Amended) The remote feeder reactance coil of claim 1 characterized in that said attenuation circuit includes a foil or a layer of conductive varnish with an ohmic resistance for connecting the terminals of said secondary winding.

8. (Amended) The remote feeder reactance coil of claim 1 characterized in that said attenuation circuit includes an arrangement of at least one ohmic resistor and one further reactive element for connecting the terminals of said secondary winding.

9. (Amended) The remote feeder reactance coil of claim 1 characterized in that said attenuation circuit (218) includes a terminal which is electrically connected to said primary winding (202).

10. (Amended) The remote feeder reactance coil of claim 1 characterized in that said primary winding (102; 202), said secondary winding (112; 212), or said primary winding and said secondary winding comprise one insulated wire.

11. (Amended) The remote feeder reactance coil of claim 1 characterized in that said primary winding (102; 202) is spirally wound up onto a core (106; 206) or a tubular body (104; 204).

13. A signal transmission system with signal transmission lines, whose intermediate amplifiers (16) are supplied with electrical energy via said signal transmission lines (14), with remote feeder reactance coils (18, 20) used for this purpose being of the type as claimed in claim 1.

REMARKS

The foregoing amendments are made to eliminate multiple dependent claims which had been present in PCT International Application No. PCT/EP99/10100. It is requested that the filing fee be calculated and the present new application be examined on the basis of the claims as herein amended.

Respectfully submitted,

Schmidt et al.

By
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DWS/lhc

Express Mail Label No. EL719434396US

Application No.: Not Yet Known
Examiner: Not Yet Known

37 CFR §1.121(b)(1)(iii) and (c)(1)(ii) SPECIFICATION AND CLAIM AMENDMENTS- MARKED UP VERSION

1. (Amended) A remote feeder reactance coil for supplying energy to, or withdrawing energy from, signal transmission lines, comprising a primary winding (102; 202) of an electrically conductive material which carries the feed current, as well as an attenuation circuit (118; 218), characterized in that

said attenuation circuit (118; 218) includes a secondary winding (112; 212) of [e.g. an electrically insulated] conductive material, wherein said secondary winding (112; 212) and said primary winding (102; 202) interact with each other through capacitive, [and/or] inductive, or capacitive and inductive coupling.

2. (Amended) The remote feeder reactance coil of claim 1 characterized in that said primary and said secondary winding (102; 112; 202; 212) have substantially parallel winding [axes] axis, in particular one common winding axis.

4. The remote feeder reactance coil of claim 2 characterized in that the turns (214) of said secondary winding (212) [arc] are wound within the turns of said primary winding, below the latter, or outside and on the turns (210) of said primary winding (202).

5. (Amended) The remote feeder reactance coil of [one of claims 1 to 4] claim 1 characterized in that said conductive material of said secondary winding (122; 212) is a material with an ohmic resistance.

6. (Amended) The remote feeder reactance coil of [one of claims 1 to 5] claim 1 characterized in that said attenuation circuit (118; 218) includes [e.g.] an ohmic resistor (116; 216) for connecting the terminals of said secondary winding (112; 212).

7. (Amended) The remote feeder reactance coil of [one of claims 1 to 5] claim 1 characterized in that said attenuation circuit includes a foil or a layer of conductive varnish with an ohmic resistance for connecting the terminals of said secondary winding.

8. (Amended) The remote feeder reactance coil of [one of claims 1 to 5] claim 1 characterized in that said attenuation circuit includes an arrangement of at least one ohmic resistor and one further reactive element for connecting the terminals of said secondary winding.

9. (Amended) The remote feeder reactance coil of [one of claims 1 to 8] claim 1 characterized in that said attenuation circuit (218) includes a terminal which is electrically connected to said primary winding (202).

10. (Amended) The remote feeder reactance coil of [one of claims 1 to 9] claim 1 characterized in that said primary winding (102; 202), [and/or] said secondary winding (112; 212), or said primary winding and said secondary winding [at least consist of] comprise one insulated wire.

11. (Amended) The remote feeder reactance coil of [one of claims 1 to 10] claim 1 characterized in that said primary winding (102; 202) is spirally wound up onto a core (106; 206) or a tubular body (104; 204).

13. A signal transmission system with signal transmission lines, whose intermediate amplifiers (16) are supplied with electrical energy via said signal transmission lines (14), with remote feeder reactance coils (18, 20) used for this purpose being of the type as claimed in [one of claims 1 to 12] claim 1.

A Remote Feeder Reactance Coil

D E S C R I P T I O N

The invention relates to a remote feeder reactance coil for energy input and output in signal transmission lines as well as in signal transmission systems including signal transmission lines, where intermediate amplifiers are supplied with electrical energy via said signal transmission lines.

Signal transmission systems known from practice transmit a high-frequency signal from a signal source to a signal drain via a signal transmission line, e.g. a coaxial cable. For this purpose, large distances often need to be bridged. As a result, the high-frequency signal will become attenuated even in high-quality lines, for which reason intermediate amplifiers will be required for regenerating the signal level.

In signal transmission systems of the prior art, such intermediate amplifiers may be supplied with electrical energy via the signal transmission line - which will eliminate the need for separate supply lines. In general, signal transmission lines of this design concept are subdivided into plural transmission sections or segments interconnected via couplers which present an as small as possible resistance to the high-frequency wanted signal. Within said transmission sections, energy is input or output via remote feeder reactance coils which constitute separation points for the high-frequency wanted signal. Consequently, the wanted signal will not become substantially attenuated at the input and output sites. However, in view of the specific design of remote feeder reactance coils, there is the danger of resonances occurring at certain frequencies which will limit the useful frequency range of the signal transmission line.

Whether or not, and to what extent, resonance effects will occur depends very much on the self-resonance behaviour of the remote feeder reactance coils. For this reason, various designs have been developed in practice in which any occurring self-resonances will either be attenuated or altogether shifted to a frequency range which is uncritical for the wanted signal. For attenuating the self-resonance effects of the winding sections of remote feeder reactance coils, for example, it is known from practice to wire a remote feeder reactance coil with resistors or conductive layers. As an alternative, or commutatively to such attenuation, it is likewise known from practice to cause such a shifting of self-resonances by varying the spacing of the turns and/or of winding sections of the remote feeder reactance coil. Moreover, remote feeder reactance coils of the prior art are further known to have the turns of the reactance coil counterwound onto a common core so as to prevent the formation of any possibly resulting noise fields.

The disadvantages of the remote feeder reactance coils known from practice above all result from the fact that the self-resonances of the circuitry will strongly limit the useful frequency ranges, despite the wirings and different winding types. Furthermore, the inductance values which can be reached with the known remote feeder reactance coils are limited with given volumes. Another problem is the considerable manufacturing effort, especially when such coils are wired with resistors and conductive layers since their exact dimensions and positions will be decisive of the resonance behaviour of the remote feeder reactance coil. The same is true for the variation of the windings, so that, in summary, one can say that prior art remote feeder reactance coils make maximum demands on production engineering, in view of the required precision in manufacturing.

It is the object of the invention to provide a reactionless connection of a high-frequency signal path and a low-frequency energy supply for signal transmission systems over an as broad as possible frequency range, at the same time keeping the required manufacturing effort small.

This object is solved according to the invention by the features of claims 1 to 13.

In accordance with the invention, a remote feeder reactance coil comprises a primary winding, preferably of an electrically insulated conductive material, carrying the feed current, and an attenuation circuit of a kind which has a secondary winding of a preferably electrically insulated conductive material, wherein said secondary and primary windings interact with each other through capacitive and/or inductive coupling. Providing a secondary winding of an electrically insulated conductive material is a much less complex step in manufacturing than the comparable measures of the prior art. At the same time, its presence allows very precise and effective influencing of the self-resonance behaviour of the remote feeder reactance coil since the use of a secondary winding clearly allows more positioning and design alternatives than other means of the prior art.

The use of a secondary winding allows a well-aimed intervention in the internal function mechanism of the reactance coil which results in the secondary winding effectively suppressing undesired interactions of individual winding sections of the primary winding.

Preferably, said primary and secondary windings have substantially parallel winding axes, in particular one common winding axis. This considerably diminishes the required manufacturing effort. If any turns of said secondary winding extend between the turns of the primary winding, the turns of the secondary winding will shield the turns of the primary winding from each other. This will largely eliminate any undesired effects between individual turns of the primary winding which occur in other designs and, cumulated, will cause the disadvantageous resonance effects. If the turns of the primary and secondary windings each are wound the ones on top of the others in a radial direction, a comparatively analogous result is obtained regarding self-resonance suppression.

The possibility of varying the ohmic resistance of said attenuation circuit e.g. by means of an ohmic resistor, allows the attenuation behaviour to be influenced precisely.

The presence of the secondary winding according to the invention allows an increase both of the reproducibility and the precision of remote feeder reactance coils, at the same time leaving a lot of leeway concerning the dimensions, choice of material and wiring of said secondary winding. Another possibility is to electrically connect one end of the secondary winding to the primary winding. Furthermore, if one substitutes complex functioning circuitry for the ohmic resistor, this will allow a well-aimed influencing of the behaviour of the attenuation winding in the frequency range.

Additional advantageous embodiments and further developments of the invention are notable from the subclaims and the description in combination with the drawings, of which:

Fig. 1 is a schematical view of a transmission section of a signal transmission line of a signal transmission system;

Fig. 2 a graphical view of the possible influence of a remote feeder reactance coil lacking any self-resonance-supporting measures on the transmission behaviour of a signal transmission system;

Fig. 3 a view of a first embodiment of a remote feeder reactance coil of the invention, and

Fig. 4 a view of a second embodiment of a remote feeder reactance coil of the invention.

The transmission section 10 of a signal transmission line shown in Fig. 1 essentially comprises a coaxial cable 14 which has two intermediate amplifiers 16 built into it. Said inter-

mediate amplifiers 16 receive their energy via remote feeder reactance coils 18 of the inventive design which are grounded via a capacitor. The energy output via said remote feeder reactance coils 18 is input to the transmission section 10 (which - concerning energy supply - is separated from the adjacent transmission sections by capacitances 22) via a remote feeder reactance coil 20 for energy input which is likewise of the inventive design and is also grounded via a capacitor.

Fig. 2 shows the possible influence a remote feeder reactance coil lacking any self-resonance-supporting measures may have on the transmission behaviour. It may be gathered from this view that the a.c. resistance will decrease with certain frequencies. This is tantamount to a negative influence on a wanted signal to be transmitted.

Fig. 3 shows a remote feeder reactance coil 100 of a first embodiment of the invention. Said remote feeder reactance coil 100 comprises a primary winding 102 of copper wire which is e.g. wound about a tubular body 104 made of plastic material. Inside said tubular body 104 is a core 106 of ferromagnetic material. The primary winding 102 has its terminal 108 connected to a signal transmission line and its terminal 120 connected to the energy supply.

Extending in parallel to said primary winding 102 is a secondary winding 112 of copper wire whose turns 114, just like the turns 110 of the primary winding 102, extend in close contact with and on said tubular body 104. The turns 114 of the secondary winding 112 extend between the turns 110 of said primary winding 102 and are thus uniformly spaced, likewise viewed from the longitudinal direction of the remote feeder reactance coil. Said secondary winding 114 is closed by an ohmic resistor 116 which is schematically shown, to give an attenuation circuit 118.

Coated on the turns 110 and 114 of the primary and secondary windings 102, 112, resp., i.e. on at least one winding

thereof, is a layer of insulating varnish so as to electrically insulate said turns 110, 114 from each other.

In operation, the terminal 108 of said primary winding 102 is connected to the high-frequency part of a circuit or a signal transmission line. The terminal 120 is both connected to a low-frequency energy input and, via a capacitor for electric shock hazard protection, to circuit ground. In operation, the secondary winding 112, together with the ohmic resistor 116, will generate a resistance load along a section of said primary winding 102, which load will effectively suppress the formation of parasitic resonances in the useful frequency range without considerably influencing the characteristics of said remote feeder reactance coil 100 in high-frequency applications.

Fig. 4 shows a remote feeder reactance coil 200 of a second embodiment. Since the remote feeder reactance coils 100, 200 of the first and second embodiments are identical in essential design features, design elements of the remote feeder reactance coil 200 of the second embodiment which are identical to those of the remote feeder reactance coil 100 of the first embodiment are marked with basically the same reference numerals as those of the first embodiment, but increased by 100. In this respect, reference is also made to those parts of the description which concern the remote feeder reactance coil 100 of the first embodiment.

The individual turns 210 of the primary winding 202 of the remote feeder reactance coil 200, which are electrically separated and insulated from each other by means of a varnish coating on the wire material of the primary winding 202, extend in direct and close contact on each other in a first area 222 and a second area 224, while they are spaced from each other in a third area 226 which extends between said first and second areas. Said secondary winding 212 which also includes an ohmic resistor 216 to give an attenuation circuit 218, has turns 214 which, viewed in the radial direction of the remote feeder

reactance coil 200, extend on the external surface of the turns 210 in the first area 222. Said turns 214 contact each other through their varnish coatings. In the remote feeder reactance coil 200 of the second embodiment, the terminal 200 of the primary winding 202 and the terminal of the secondary winding 212 are electrically interconnected.

C L A I M S

1. A remote feeder reactance coil for supplying energy to, or withdrawing energy from, signal transmission lines, comprising a primary winding (102;202) of an electrically conductive material which carries the feed current, as well as an attenuation circuit (118;218)

characterized in that

said attentuation circuit (118;218) includes a secondary winding (112;212) of e.g. an electrically insulated conductive material, wherein said secondary winding (112;212) and said primary winding (102;202) interact with each other through capacitive and/or inductive coupling.

2. The remote feeder reactance coil of claim 1 characterized in that said primary and said secondary winding (102;112; 202;212) have substantially parallel winding axes, in particular one common winding axis.

3. The remote feeder reactance coil of claim 2 characterized in that the turns (114) of said secondary winding (112) extend between the turns (110) of said primary winding (102).

4. The remote feeder reactance coil of claim 2 characterized in that the turns (214) of said secondary winding (212) arc wound within the turns of said primary winding, below the latter, or outside and on the turns (210) of said primary winding (202).

5. The remote feeder reactance coil of one of claims 1 to 4 characterized in that said conductive material of said

secondary winding (112;212) is a material with an ohmic resistance.

6. The remote feeder reactance coil of one of claims 1 to 5 characterized in that said attenuation circuit (118;218) includes e.g. an ohmic resistor (116;216) for connecting the terminals of said secondary winding (112;212).

7. The remote feeder reactance coil of one of claims 1 to 5 characterized in that said attenuation circuit includes a foil or a layer of conductive varnish with an ohmic resistance for connecting the terminals of said secondary winding.

8. The remote feeder reactance coil of one of claims 1 to 5 characterized in that said attenuation circuit includes an arrangement of at least one ohmic resistor and one further reactive element for connecting the terminals of said secondary winding.

9. The remote feeder reactance coil of one of claims 1 to 8 characterized in that said attenuation circuit (218) includes a terminal which is electrically connected to said primary winding (202).

10. The remote feeder reactance coil of one of claims 1 to 9 characterized in that said primary winding (102;202) and/or said secondary winding (112;212) at least consist of one insulated wire.

11. The remote feeder reactance coil of one of claims 1 to 10 characterized in that said primary winding (102;202) is spirally wound up onto a core (106;206) or a tubular body (104;204).

12. The remote feeder reactance coil of claim 11 characterized in that said tubular body (104;204) is of an electrically

insulating material and encompasses a core (106;206) of ferromagnetic material.

13. A signal transmission system with signal transmission lines, whose intermediate amplifiers (16) are supplied with electrical energy via said signal transmission lines (14), with remote feeder reactance coils (18,20) used for this purpose being of the type as claimed in one of claims 1 to 12.

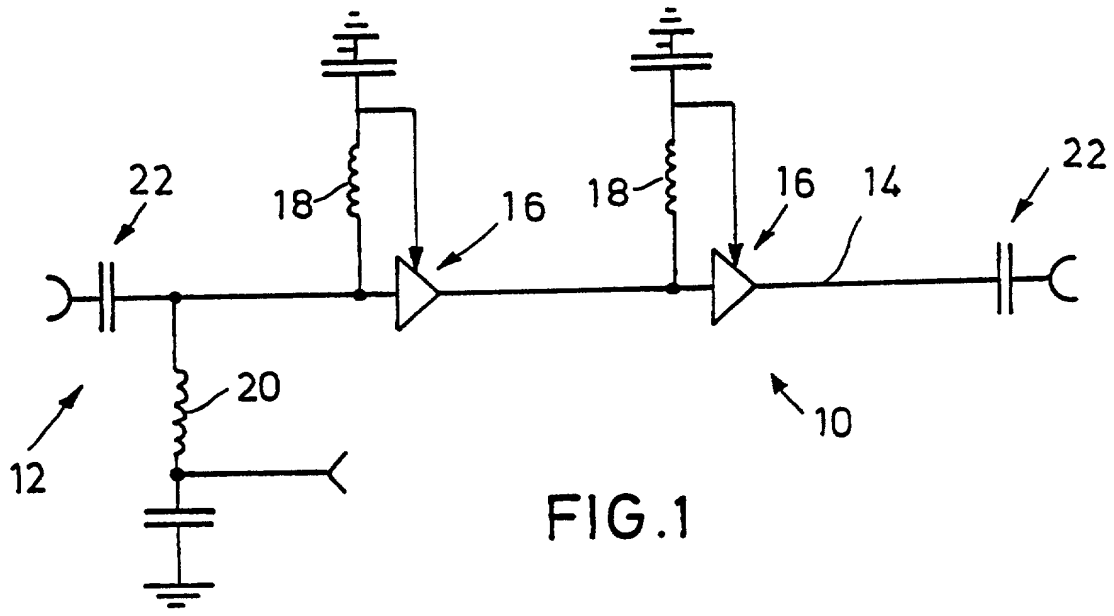

FIG.1

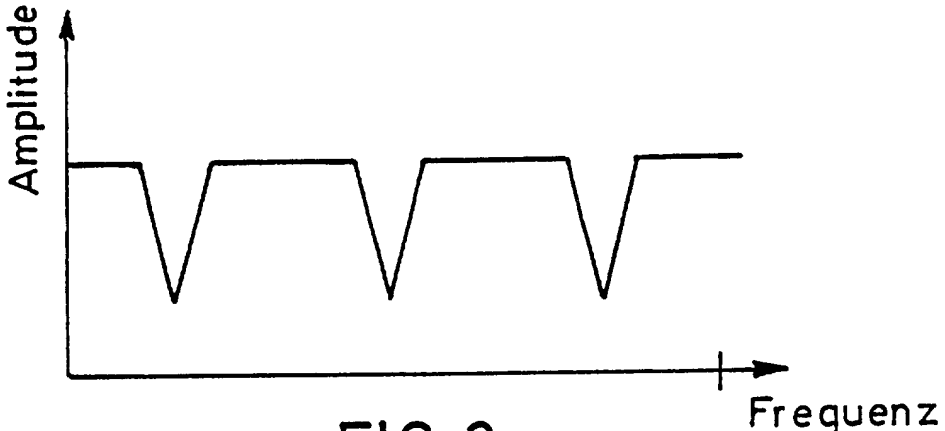

FIG.2

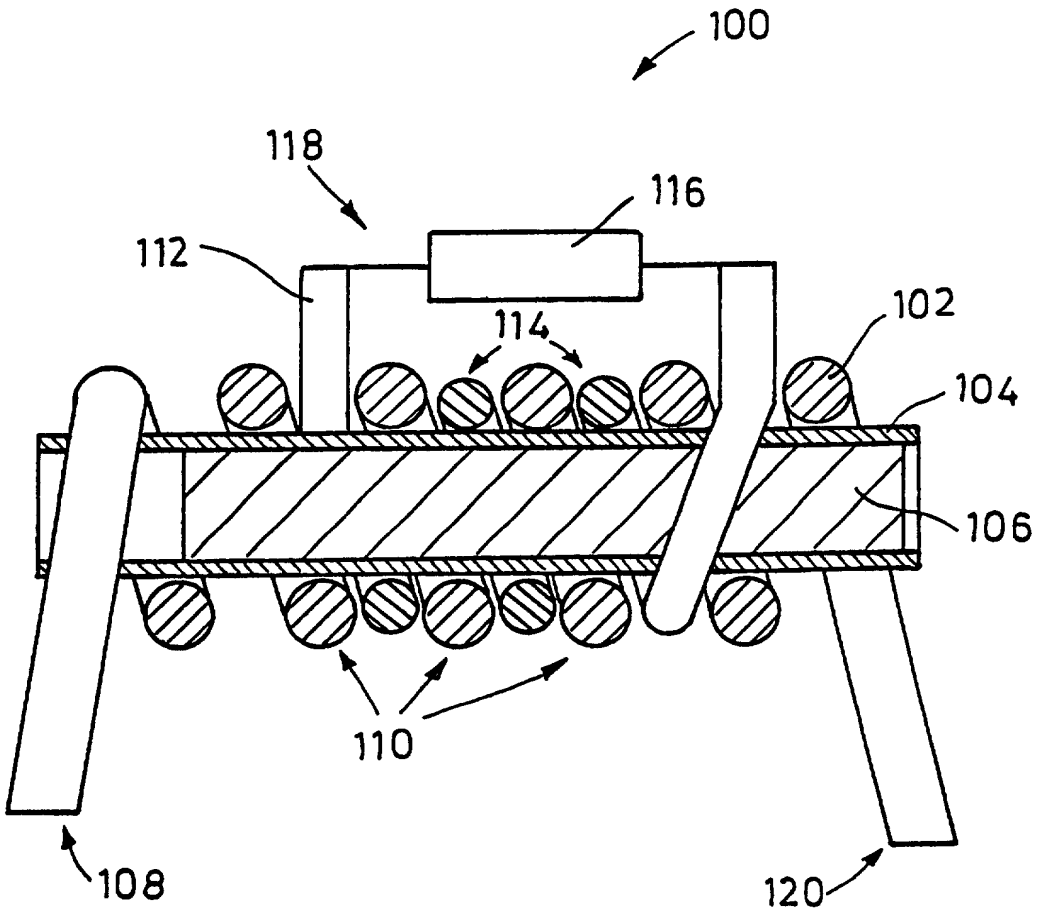

FIG. 3

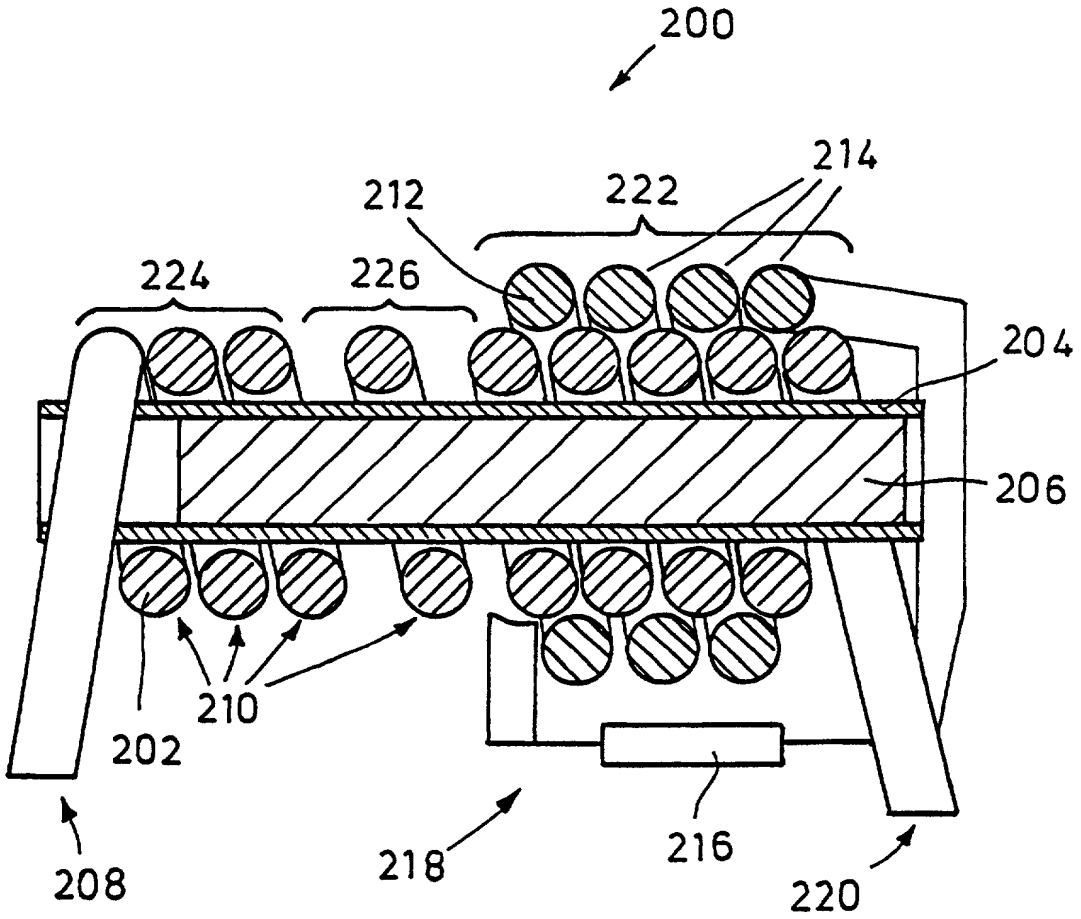

FIG. 4

Express Mail Label No. EL719434396US

Please type a plus sign (+) inside this box → [+]

PTO/SB/01 (12-97)
Approved for use through 9/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	FCS-PT001
First Named Inventor	Schmidt et al.
COMPLETE IF KNOWN	
Application Number	Not Yet Known
Filing Date	Not Yet Known
Group Art Unit	Not Yet Known
Examiner Name	Not Yet Known

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

A REMOTE FEEDER REACTANCE COIL

(Title of the invention)

the specification of which
☐ is attached hereto
OR
☒ was filed on (MM/DD/YYYY) 12/17/1999 as United States Application Number or PCT International Application Number PCT/EP99/10100 and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
198 58 506.3	Germany	12/18/1998	☐	☐	☒
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)
PCT/EP99/10100	12/17/1999	

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As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number 3624 → *Place Customer Number Bar Code Label here*

OR ☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Namely, the Attorneys of Volpe and Koenig, P.C.			

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto

Direct all correspondence to: ☒ Customer Number or Bar Code Label 3624 OR ☐ Correspondence address below

Name	VOLPE AND KOENIG, P.C.				
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
Rainer	Schmidt

Inventor's Signature	Schmidt					Date	08.06.01
Residence: City	Lüderburg DE	State		Country	Germany	Citizenship	DE
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Post Office Address							
City	Lüderburg	State		ZIP	D-39446	Country	Germany

☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

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DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet
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Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any])	Family Name or Surname		
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Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any])	Family Name or Surname		
Inventor's Signature			**Date**
Residence: City	**State**	**Country**	**Citizenship**
Mailing Address			
Mailing Address			
City	**State**	**ZIP**	**Country**

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any])	Family Name or Surname		
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